

*REMARKS/ARGUMENTS**The Pending Claims*

Claims 1-18 are pending currently and are directed to a flameproof moulding composition and a method of producing a moulded article therefrom. Reconsideration of the pending claims is respectfully requested.

The Amendments to the Specification

The specification has been amended to clarify that "melam" is a chemical whose IUPAC name is N_2 -(4,6-diamino-1,3,5-triazin-2-yl)-1,3,5-triazine-2,4,6-triamine, as would be understood by one of ordinary skill in the art. See, e.g., Bann, B., and Miller, S.A., "Melamine and Derivatives of Melamine," *Chem. Rev.* (1958), 58, 155. No new matter has been added by way of this amendment.

The Amendments to the Claims

Claims 2 and 10 have been amended to delete language relating to preferred ranges. New claims 14-16 have been added and are directed to the preferred ranges previously recited in claims 2 and 10. Claim 12 has been amended to recite a method of producing moulded articles comprising providing a flameproof moulding composition comprising components (a) – (d) as recited in claim 1, and producing a moulded article from the flameproof moulding composition using an injection moulding process. Claim 13 has been amended to be dependent on claim 12 and to recite that the moulded articles fulfill the requirement according to the UL 94-flammability classification VO found with test pieces with a thickness of 0.4 mm. New claim 17 has been added and recites that the flameproof moulding composition a flammability classification according to UL94 of VO at 0.4 mm. New claim 18 has been added and is directed to a moulded article comprising the components recited in claim 1, wherein the moulded article fulfills a flammability classification according to UL94 of VO at 0.4 mm. New claims 17 and 18 are supported by the specification at, e.g., page 5, ll. 8-12, 18-29; page 11, ll.14-21. No new matter has been added by way of these amendments.

Summary of the Office Action

The specification is objected to. Claims 12 and 13 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite, and under 35 U.S.C. § 101. Claims 1-13 stand rejected under 35 U.S.C. § 103(a) as obvious over Kleiner et al. (i.e., U.S. 5,773,556) in view of Koch et al. (i.e., U.S. 5,071,924).

The Objection to the Specification

The objection to the specification is moot in view of the amendment thereto to clarify that “melam” refers to the compound N2-(4,6-diamino-1,3,5-triazin-2-yl)-1,3,5-triazine-2,4,6-triamine. Accordingly, Applicants submit that the objection should be withdrawn.

The Indefiniteness Rejection

The indefiniteness rejection of claims 12 and 13 is moot in view of the amendments thereto to rewrite the “use” claims as method claims. Accordingly, Applicants submit that the rejection should be withdrawn.

The Obviousness Rejection

The obviousness rejection is respectfully traversed.

Kleiner et al. and Koch et al., taken alone or in combination, fail to teach or suggest the invention recited by the pending claims. Kleiner et al. is directed to polyamide (e.g., nylon 6 or nylon 66) molding compositions comprising calcium and aluminum salts of phosphinic or diphosphinic acids as flame retardants. Koch et al. is directed to thermoplastic molding materials based on a blend of polyamides, which optionally contain a flameproofing agent (e.g., red phosphorus). Neither Kleiner et al. nor Koch et al. teaches or suggests that the use of calcium and aluminum salts of phosphinic or diphosphinic acids as flame retardants in combination with a semi-aromatic, partially crystalline polyamide can result in a thin-walled molded component that can withstand temperatures up to 270°C for short periods of time without dimensional change. In addition, neither Keiner et al. nor Koch et al. teaches or suggests that the use of (a) calcium and aluminum salts of phosphinic or diphosphinic acids as flame retardants in specific combination with (b) a semi-aromatic, partially crystalline polyamide can yield a moulded product that satisfies the flammability requirement

of the electronics industry of VO at 0.4 mm according to UL-94. Indeed, Kleiner et al. and Koch et al. fail to mention the desirability of satisfying the flammability class VO at 0.4 mm for thin walled moulded articles as opposed to the more typical requirement that polymer moulding compositions satisfy the flammability class of VO for a test piece of thickness not below 1.2 mm.

Applicants have discovered that the use of salts of phosphoric acids as flame retardants in combination with semi-aromatic, partially crystalline polyamides with melting points of at least 280°C surprisingly provides special properties. Specifically, the combination recited in the pending claims provides thermoplastic moulding compositions which fulfill a flammability classification according to the UL-94 test of VO at a thickness of 0.4 mm. In addition, these compositions can withstand temperatures of up to 270°C for short periods of time without dimensional change. As a result, the composition is suitable for the production of very thin-walled moulded articles for electrical and electronic appliances with very good flame resistance.

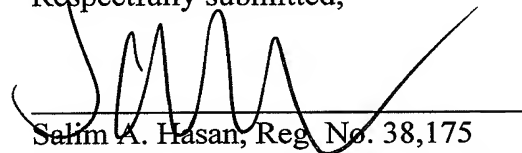
The unexpected properties of the composition of the invention are illustrated by the examples set forth in the instant specification. In particular, the compositions of examples 1 and 2 (invention), which contained partially aromatic, partially crystalline polyamides in combination with aluminum dimethylphosphinate and calcium methylethylphosphinate, respectively, had flammability ratings of V-0 for a 0.4 mm thick test sample as well as a tensile E-modulus of 12,200 MPa and 14,000 MPa, respectively, and a heat deflection temperature of 287°C and 285°C, respectively. In contrast, a composition which contained polyamide 66 in combination with aluminum dimethylphosphinate (comparative example) failed to provide any flammability rating for a 0.4 mm thick test sample of V-0, V-1, or V-2. In addition, the composition of the comparative example only had a heat deflection temperature of 248°C and a lower tensile modulus of 10,400 MPa.

Since Kleiner et al. and Koch et al., taken alone or in combination, fail to teach or suggest the combination recited by the pending claims, Applicants submit that the obviousness rejection is improper and should be withdrawn.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'S. Hasan', is written over a horizontal line.

Salim A. Hasan, Reg. No. 38,175
LEYDIG, VOIT & MAYER, LTD.
Two Prudential Plaza, Suite 4900
180 North Stetson Avenue
Chicago, Illinois 60601-6731
(312) 616-5600 (telephone)
(312) 616-5700 (facsimile)

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